

# MATERIAL SAFETY DATA SHEET



## UAN 32%

### PRODUCT AND COMPANY IDENTIFICATION SECTION 1

**Chemical Product:**

UAN 32%

Common Name: Urea Ammonium Nitrate Solution

Chemical Description: Nitrogen Fertilizer Solution

TSCA/CAS No.: Not available.

Formula:  $\text{CH}_4\text{N}_2\text{O} + \text{NH}_4\text{NO}_3 + \text{H}_2\text{O}$ 
**Manufactured By:**

Land View, Inc.

P. O. Box 475

Rupert, ID 83350

**Emergency Phone Numbers:**

Emergency Telephone: DAYS: (208) 531-4100

24-Hour Emergency HAZMAT Response (800) 229-5252

EPA National Response Center: (800) 424-8802

### INGREDIENTS

#### SECTION 2

CHEMICAL	CAS NO.	%	TLV OR PEL	RQ (lbs)
Ammonium Nitrate	6484-52-2	42-47%	*	*
Urea	57-13-6	37-37%	*	*
Water	7732-18-5	24-16%	*	*
Free Ammonia	7664-41-7	<.05%	50 ppm	*
UAN Solution	15978-77-5	*	*	*

\* N.A. - Not Available.

### EMERGENCY/HAZARDS OVERVIEW

#### SECTION 3

Colorless liquid with a slight ammonia odor. When the water in UAN evaporates, residue may include solid ammonium nitrate and urea. When sensitized or during decomposition, solid ammonium nitrate may become unstable and/or explosive. UAN pumps operated with blocked discharge have been

known to detonate. When UAN is heated to decomposition, it may produce vapors containing nitrogen oxides (NO<sub>x</sub>) and ammonia. Use water to control fires involving UAN if water is compatible with burning material. UAN itself is non-flammable. UAN can cause irritation to eyes and skin.

#### **FIRST AID SECTION 4**

**Eyes:** Immediately flush eyes with copious amounts of tepid water for at least 15 minutes. If irritation, pain, swelling, excessive tearing, or light sensitivity persists, the patient should be seen in a health care facility.

**Skin:** Immediately flush exposed area with copious amounts of tepid water for at least 15 minutes followed by washing area thoroughly with soap and water. The patient should be seen in a health care facility if irritation or pain persists.

**Ingestion:** If conscious, give the patient large quantities of milk or water to drink immediately. Do not induce vomiting. Seek medical attention.

**Inhalation:** Generally not considered an inhalation hazard. If irritation develops, move patient to fresh air and monitor. If cough or difficulty in breathing develops, evaluate for respiratory tract irritation. If needed, administer supplemental oxygen if trained to do so. If irritation, coughing, or difficulty breathing persists, the patient should be seen in a health care facility.

#### **FIRE AND EXPLOSION HAZARDS SECTION 5**

**Extinguishing Media:** Use water to extinguish a fire involving UAN if water is compatible with the burning material

##### **Special Firefighting Procedures:**

A.) Apply cooling water to sides of containers that are exposed to flames until well after fire is out.

B.) Positive pressure self-contained breathing apparatus (SCBA) should be used when there is a potential for inhalation of vapors and/or fumes.

C.) Wear full fire fighting protective equipment that is appropriate for conditions.

**CAUTION:** A.) Runoff from fire control or dilution water may cause pollution.

B.) When the water in UAN evaporates, residue may include solid ammonium nitrate and urea. When sensitized or during decomposition, solid ammonium nitrate may become unstable and/or explosive. UAN pumps operated with blocked discharge have been known to detonate. When UAN is heated to decomposition, it may produce vapors containing nitrogen oxides (NO<sub>x</sub>) and ammonia.

C.) Avoid welding or burning on pipes, valves, or tanks that have contained UAN solution until they have been thoroughly rinsed. Residual ammonium nitrate may explode under conditions of confinement and high temperature.

#### **SPILLS AND LEAKS SECTION 6**

**Containment:** Keep unnecessary people away, isolate hazard area and deny entry. UAN may be toxic to cattle (ruminants) or poultry if ingested.

**Clean Up:** **Small Spill:** (Generally, a small spill is one that involves a single, small package (i.e. up to a 55 gallon drum), small cylinder, or a small (non-continuing) leak from a large container.) A.) Stop leak if you can do so without risk. B.) Spilled area may become

slippery. C.) Wash contaminated areas with large volumes of water if approved by local, state, and federal environmental agencies. D.) Runoff may cause pollution.

**Large Spill:** A.) Dike ahead of liquid spill for later recovery of usable product and proper disposal of any residue. B.) Stop leak if you can do so without risk. C.) Spilled area may become slippery. D.) Wash contaminated areas with large volumes of water if approved by local, state, and federal environmental agencies. E.) Runoff may cause pollution.

Evacuation: Necessary

## STORAGE AND HANDLING

### SECTION 7

Storage: Do not use zinc or copper (brass, bronze, etc...) alloys in contact with UAN solution due to corrosion. Also, cast iron, malleable iron, or ductile iron are much more susceptible to corrosion than aluminum or carbon steel. Be especially wary of plugs and fittings on storage tanks made from these materials.

Transfer Equipment:

Work/Hygienic Practices: Use proper personal protective equipment when working with or around UAN (see section 8).

## PERSONAL PROTECTIVE EQUIPMENT

### SECTION 8

Eyes: If there is a potential for UAN to contact eyes, it is recommended that safety glasses or goggles be used.

Skin: It is recommended that if a person may be exposed to UAN for an extended length of time or if a person demonstrates sensitivity to UAN, skin protection should be used. Most liquid tight gloves and liquid resistant clothing is acceptable.

Respiratory: UAN itself does not pose an inhalation hazard. Decomposition of UAN may produce nitrogen oxides (NO<sub>x</sub> vapors) and ammonia. Use fresh air supply systems to protect against NO<sub>x</sub> and/or ammonia vapors. IF necessary to enter a confined area that contains UAN, monitor for ammonia vapors. If ammonia vapors are present, protect as follows.

Ventilation:

Other: Safety shower and eyewash fountain or at least 5 gallons of accessible clean water should be provided in a UAN handling area.

## PHYSICAL AND CHEMICAL DATA

### SECTION 9

Appearance:	Colorless liquid
Odor:	Slight ammonia odor (pungent)
pH:	6.8 - 7.5
Specific Gravity:	32% 1.330
Vapor Pressure:	8.6 – 17.5 mmHg (@60°F)
Vapor Density:	Approximately 1.07 (@60°F)
Boiling Point:	Approximately 225°F (107° C)
Freezing Point:	32% UAN salts out at 32°F (0° C)
Water Solubility:	100%

Density:	32% 11.07 lb/gal at 60° F
Evaporation Rate:	Not available.
Viscosity:	Not available.
% Volatile:	Not available.
Octanol/Water Partition Coefficient:	Not available.
Saturated Vapor Concentration:	Not available.

## STABILITY AND REACTIVITY

### SECTION 10

Stability:	Stable.
Incompatibility:	UAN will form nitrogen trichloride, which may be explosive, when mixed with chlorine and hypochlorites. If UAN solution has been dehydrated to ammonium nitrate and urea, refer to the incompatibility/decomposition information for those chemicals. UAN will form urea nitrate when mixed with nitric acid at low pH. Urea nitrate may become unstable and/or explosive under certain conditions.
Hazardous Decomposition Products:	When the water in UAN evaporates, residue may include solid ammonium nitrate and urea. When sensitized or during decomposition, solid ammonium nitrate may become unstable and/or explosive. UAN pumps operated with blocked discharge have been known to detonate. When UAN is heated to decomposition, it may produce vapors containing nitrogen oxides (NO <sub>x</sub> ) and ammonia.
Hazardous Polymerization:	Will not occur.

## POTENTIAL HEALTH EFFECTS

### SECTION 11

<b>Toxicity:</b>	
<b>Acute Oral Toxicity</b>	
LD <sub>50</sub> Rat:	>2,000 mg/kg bw (OECD 425)
<b>Ecotoxicity:</b>	
<b>Acute Toxicity to Fish</b>	
LC50 Oncorhynchus mykiss:	>103 mg/L (96 hrs)
LC50 Pimephalas promelas:	>100 to 500 mg/L (96 hrs)

## ECOLOGICAL INFORMATION

### SECTION 12

Notify local health and wildlife officials and operators of any nearby water intakes of contamination or discharge into or leading to waterways.

Fertilizers containing ammonium nitrate and urea can cause poisoning in livestock and poultry. Nitrogen solutions can be toxic to aquatic life and spills may cause algae blooms in static waters. The conversion of ammonia to nitrites/nitrates by bacteria in aquatic systems can reduce the concentration of dissolved oxygen (referred to as nitrogenous oxygen demand).

Note: See Ecotoxicity information in section 11.

### **DISPOSAL - SECTION 13**

UAN is not listed by the Federal EPA as a hazardous waste. Consult state/provincial and local environmental agencies for acceptable disposal methods. Recover product for use as a fertilizer if possible.

### **TRANSPORTATION SECTION 14**

UAN is not listed by any U.S. or Canadian transportation authority as a hazardous material and as such, no specific information is available.

### **REGULATORY INFORMATION SECTION 15**

**CERCLA:** Not Listed

**SARA TITLE III:** UAN contains ammonia and nitrate ions from ammonium nitrate which are subject to the reporting requirements of section 313 of SARA and 40 CFR Part 372.

**PROPOSITION 65:** None.

**TSCA Inventory:** Listed

### **OTHER SECTION 16**

All information appearing in this document was based on data provided by third party sources and was compiled to comply with the Federal Hazard Communication Standard and the California Hazardous Substances Information and Training Act. The information is believed to be accurate as of the preparation date, but is not warranted as being the final authority in the use of this product. This information does not purport to be legal or medical advice.